Amendments

1. (Currently Amended) A method for forming a contact hole of a semiconductor device, comprising the steps of:

(a) sequentially forming a capping layer and a planarized interlayer insulating film on a semiconductor substrate having a ~~predetermined~~ lower structure;

(b) selectively etching the interlayer insulating film to expose a ~~predetermined region~~ portion of the capping layer;

(c) removing the exposed capping layer via a plasma etching process, whereby a polymer residual is generated;

(d) subjecting the resulting structure to a plasma treatment using a mixture gas containing oxygen to convert the polymer residual into a silicon oxide film; and

(e) performing a cleaning process to remove the silicon oxide film.

2. (Original) The method according to claim 1, wherein the plasma treatment is performed using a plasma of NF_3/O_2/He mixture gas, plasma of Ar/O_2 mixture gas, plasma of CF_4/O_2 mixture gas or plasma of CF_4/O_2/Ar mixture gas.

3. (Original) The method according to claim 1, wherein the step (b), (c) and (d) are performed in a same chamber without intermittence.

4. (Original) The method according to claim 1, wherein the step (d) is performed in an ex-situ process in a separate plasma chamber.